

What is claimed is:

1. A digital switching system having a configuration comprising:

multiplexing means for multiplexing time slots from a plurality of circuits, multiplexed respectively, by the multiplexed time slot unit;

switching memory means for storing and switching data of the time slots supplied from the multiplexing means, for one frame portion;

switching control means comprising switching correspondence means for directing interchange of the time slots of the switching memory means in response to a switching request from an upper layer controller; and

demultiplexing means for demultiplexing data as read out using data supplied from the switching correspondence means as addresses of the switching memory means into the plurality of the circuits,

the switching correspondence means further comprising:

information receiving means for receiving connection information from the upper layer controller;

read-out regulating means for writing the connection information received through the information receiving means to an address designated by the connection information, in a first memory means and a second memory means, respectively, for storing the connection information corresponding to before or after switching, and sequentially reading out the connection information stored, in read-out order of the

switching memory means;

network switching control means for generating a switching signal in synchronization with an internal standard timing in response to a switching directive of a network, delivered from the upper layer controller; and

read-out selection means for selecting read-out from either the first memory means of the read-out regulating means or the second memory means of the same in response to the switching signal delivered from the network switching control means.

2. A digital switching system according to claim 1, wherein with respect to the read-out regulating means, the first memory means and the second memory means are capable of independently and simultaneously writing and reading, respectively.

3. A digital switching system according to claim 1, wherein the network switching control means generates the switching signal to coincide with the forefront of a frame.

4. A digital switching system according to claim 1, wherein the switching correspondence means comprises switching memory means for writing by the switching unit the connection information supplied from the information receiving means, that is disposed between the information receiving means and the read-out selection means, the switching memory means read out connection information with the switching signal from the network switching control means, written as a read-out signal, the read-out selection means

is supplied with the connection information from the switching memory means and the information receiving means, respectively, outputting either of the connection information to the read-out regulating means in response to the switching signal from the network switching control means, and the read-out regulating means is connected with the switching memory means.

5. A method of switching data of a digital switching system, comprising:

a multiplexing step of multiplexing time slots supplied from a plurality of circuits;

a writing step of sequentially writing data of the time slots multiplexed by the multiplexing step;

a data interchange step comprising receiving connection information supplied from the side of an upper layer, corresponding to before, and after switching, respectively, writing the connection information at addresses contained in the connection information, sequentially reading out the connection information stored as the read-out order of multiplexed data, and concurrently changing accommodation destinations of the time slots multiplexed by a directive from the side of the upper layer at a standard timing in response to a switching directive from the side of the upper layer when changing the accommodation destinations; and

a demultiplexing step of demultiplexing the data from the data interchange step into a plurality of circuits, respectively, to be supplied thereto.

6. A method of switching data of a digital switching system according to claim 5, wherein the data interchange step comprises:

an information receiving step of receiving the connection information supplied from the side of the upper layer before switching, and the same after switching, respectively;

an information input / output step of storing the connection information received in the information receiving step, and reading out the connection information supplied before and after switching;

a switching signal generation step of generating a switching signal for switching in synchronization with the timing in response to the switching directive of the connection information supplied from the side of the upper layer;

a selection step of selecting the connection information after switching of all the connection information as read out in the information input / output step in response to the switching signal generated; and

a read-out step of reading out the multiplexed data as written in the writing step on the basis of the connection information selected in the selection step.

7. A method of switching data of a digital switching system according to claim 5, wherein the data interchange step comprises:

an information receiving step of receiving the

connection information supplied from the side of the upper layer before switching, and the same after switching, respectively;

an information writing step of writing the connection information for use after switching of all the connection information received in the information receiving step, when a switching request is delivered from the side of the upper layer;

a switching signal generation step of generating a switching signal for switching in synchronization with the timing in response to the switching directive of the connection information supplied from the side of the upper layer;

a copying step of reading out the connection information after switching on the rising edge of the switching signal generated in the switching signal generation step as the connection information before switching;

a read-out step of storing the connection information as read out in the copying step, and reading out the multiplexed data as written in the writing step on the basis of the connection information; and

a selection step of selecting the connection information in response to the fall of the switching signal generated.

8. A method of switching data of a digital switching system according to claim 7, wherein the copying step reads out addresses and data contained in the connection information written in the information writing step, in

increasing address order, supplying the same to the read-out step, and the read-out step writes data of connection information, as supplied, to an address indicated by the connection information, as supplied, while reading out the data written in increasing address order; and using the data as read-out addresses for the data of the time slots written in the writing step.

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